REMARKS

Reconsideration of this application, as amended, is respectfully requested.

Claims 1-8, 10-17 and 19-26 are pending. Claims 1-8, 10-17 and 19-26 stand rejected.

Claims 1, 2, 4-8, 10-11, 13-17, 19-20, and 22-26 have been amended. No claims have been canceled. No claims have been added. Support for the amendments is found in the specification, the drawings, and in the claims as originally filed. Applicants submit that the amendments do not add new matter.

REJECTIONS UNDER 35 U.S.C. § 103

Claims 1, 2, 4-8, 10-11, 13-17, 19-20, 22-26 have been rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Publication No. 2003/0079210 to Markstein et al. ("Markstein"), in view of U.S. Patent No. 5,875,318 to Langford ("Langford").

Applicants have amended claim 1 to include modifying the first program to expand a register set for a routine in the first program transparently to execution of the first program that includes adding one or more registers to the register set, wherein the one or more registers of an expanded register set for use when executing the first program are used by a second program to store data to analyze the execution of the first program.

It is respectfully submitted that Langford does not teach or suggest a combination with Langford, and Langford does not teach or suggest a combination with Markstein.

Markstein discloses the compiler that receives source code to be compiled, converts it into the intermediate code, and performs register allocation. Further, Markstein discloses that the compiler optimizes the intermediate code, and generates the target machine-readable code from the intermediate code ([0021], Figure 1).

In particular, Markstein discloses

In step 220, optimization, such as redundant code elimination and constant propagation are performed for translated intermediate language instructions. <u>In step 222, the intermediate language instructions are converted into target instructions. Additional register allocation may be needed if a single intermediate level instruction expands into more than one target level instruction.</u>

(Markstein, [0051]) (emphasis added).

Thus, Markstein merely discloses allocating additional registers for the target level instructions. In contrast, amended claim 1 refers to modifying the first program to expand a register set for a routine in the first program transparently to execution of the first program that includes <u>adding one or more registers to the register set for use when executing the first program, wherein the one or more registers of an expanded register set for use when executing the first program are used by a second program to store data to analyze the execution of the first program.</u>

Langford discloses an instruction set translator to translate self-modifying source code. More specifically, Langford discloses

FIG. 2 illustrates a block of source code and its resulting translation. Source code 10 is made of a sequence of instructions which comprise instruction 12 and instruction (m). Instruction 12 modifies instruction (m). <u>This modification may be in the form of incrementing or using a different register to store a particular data each time the code is executed.</u> For example, the basic instruction of instruction (m) may be to copy the contents of a register into memory using another register and an offset to form the address of the memory store such as: copy Cx Ds i, where Cx is the register from which the data will be copied, Ds is the register containing the base address of the data and (i) is an offset to Ds. Instruction 12 may be incrementing the offset (i). Therefore each time the code is executed, the content of register Cx is copied into a different memory location.

(Langford, col. 3, lines 1-15) (emphasis added)

Thus, Langford merely discloses using a different register to store data each time the code is executed. In contrast, amended claim 1 refers to modifying the first program to expand a register set for a routine in the first program transparently to execution of the first program that includes <u>adding one or more registers to the register set for use when executing the first program, wherein the one or more registers of an expanded register set for use when executing</u>

the first program are used by a second program to store data to analyze the execution of the first program.

Thus, neither Markstein, Langford, nor a combination thereof discloses, teaches, or suggests modifying the first program to expand a register set for a routine in the first program transparently to execution of the first program that includes adding one or more registers to the register set for use when executing the first program, wherein the one or more registers of an expanded register set for use when executing the first program are used by a second program to store data to analyze the execution of the first program, as recited in amended claim 1.

Therefore, it is respectfully submitted that amended claim 1 is not obvious under 35 U.S.C. § 103(a) over Markstein, in view of Langford.

Because claims 2, 4-8, 10-11, 13-17, 19-20, 22-26 contain the related limitations, Applicants respectfully submit that amended claims 2, 4-8, 10-11, 13-17, 19-20, 22-26 are not obvious under 35 U.S.C. § 103(a) over Markstein, in view of Langford.

Claims 3, 12 and 21 have been rejected under 35 U.S.C. § 103(a) as being unpatentable over Markstein, in view of Langford and further in view of U.S. Patent No. 5,644,709 to Austin ("Austin").

It is respectfully submitted that Markstein does not teach or suggest a combination with Langford and Austin, Langford does not teach or suggest a combination with Markstein and Austin, and Austin does not teach or suggest a combination with Markstein and Langford.

Austin discloses detecting computer memory access errors (Abstract), and similarly Markstein and Langford fails to disclose modifying the first program to expand a register set for a routine in the first program transparently to execution of the first program that includes adding one or more registers to the register set for use when executing the first program, wherein the one or more registers of an expanded register set for use when executing the first program are

used by a second program to store data to analyze the execution of the first program, as recited in amended claim 1.

Thus, neither Markstein, Langford, Austin, nor a combination thereof, discloses, teaches, or suggests the discussed limitations of amended claim 1.

Therefore, it is respectfully submitted that amended claim 1 is not obvious under 35 U.S.C. § 103(a) over Markstein, in view of Langford, and further in view of Austin.

Because claims 3, 12 and 21 contain the related limitations, Applicants respectfully submit that amended claims 3, 12 and 21 are not obvious under 35 U.S.C. § 103(a) over Markstein, in view of Langford, and further in view of Austin.

CONCLUSION

It is respectfully submitted that in view of the amendments and arguments set forth herein, the applicable rejections and objections have been overcome. If there are any additional charges, please charge Deposit Account No. 02-2666 for any fee deficiency that may be due.

Respectfully submitted,

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